

REMARKS/ARGUMENTS

Claims 18-23, 25-33, and 35-40 are pending and were rejected. By virtue of this response, no claims have been cancelled, amended, or added. Accordingly, claims 18-23, 25-33, and 35-40 are currently under consideration.

Applicant has not dedicated or abandoned any unclaimed subject matter and, moreover, has not acquiesced to any rejections and/or objections made by the Office. Applicant expressly reserves the right to pursue prosecution of any presently unclaimed embodiments in future continuations, continuations-in-part, and/or divisional applications. Also, in view of the new bases for claim rejection, Applicant withdraws all arguments and comments made in previous submissions to the Patent Office unless specifically referred to in this document.

Double Patenting Rejection

Claims 18-23 and 25-40 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 16-30 of copending Application No. 10/563,170. Applicant notes that the rejection is provisional and that it is premature for Applicant to address the rejection at this time. The provisional obviousness-type double patenting rejection is based in comparing claims of a copending application to claims in the current application, and the basis for or arguments relating to obviousness-type double-patenting may change as claims are amended. Consequently, any arguments made in the present application or terminal disclaimer submitted prematurely may be mooted by e.g. claim amendments made in this or the copending application. Applicant will therefore address the rejection either by traverse or by submission of a terminal disclaimer as an administrative convenience upon an indication of allowance of claims in copending application serial no. 10/563,170.

Claim Rejections under 35 U.S.C. §103(a)

1. Rejection of claims 18-22, 27-29, and 35-40 from Sick in view of Mertens

Claims 18-22, 27-29, and 35-40 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sick (4,820,033) in view of Mertens (4,435,043). Applicant respectfully traverses.

The references when combined must provide the components of Applicant's claimed invention in the configuration specified in Applicant's claim in order to render the claim obvious. Sick in view of Mertens does not provide a carrier structure having components arranged in the configuration specified in Applicant's claims.

The Office Action refers to Sick's solar radiation receiver 28 as corresponding to a spine member of a space frame in Applicant's claimed structure. It is not apparent to Applicant from Sick or from the Office Action how Sick's solar radiation receiver 28 would be considered a spine member of a space frame that forms part of a frame structure upon which a platform and reflector are mounted, as specified in Applicant's independent claims 18 and 40. The Office must provide sufficient information explaining how the claimed structure's components and their relationships to one another are disclosed by a cited reference. However, the Office Action is silent with respect to (1) what constitutes a space frame in the Sick patent and (2) how Sick's solar radiation receiver 28 would be a spine member of that space frame. The Office Action has therefore not established a *prima facie* case of unpatentability of the claims under 35 U.S.C. Sec. 103(a).

Further, a person of ordinary skill would not view a solar radiation receiver 28 in Sick's solar mirror apparatus as being a spine of a space frame and especially not a spine of a space frame that is part of a frame structure upon which a reflector element and platform sit, as specified by independent claims 18 and 40. Further clarification of the rejection and opportunity to address that rejection in response to a non-final Office Action are requested in the event the rejection is not withdrawn.

Sick in view of Mertens also fails to disclose that a space frame has struts connecting opposite end regions of a curved transverse frame member to the space frame's spine member as specified in Applicant's independent claims 18 and 40. The Office Action states at p. 4 that

“Sick ... discloses struts 32 connecting opposite ends of the curved transverse frame members 12 to the spine 28 via hoops 26”.

Sick at 4:27-31 discloses “stiffening struts 32 [which] extend from the lower regions of the circular rings 26 to the central regions of the two clamping section supports 11 in order to provide an overall arrangement which is as stiff as possible against bending and twisting.”

Sick does not disclose or suggest a structure in which struts attach to a curved transverse frame member at opposite ends of the curved transverse frame member as specified in Applicant’s independent claims 18 and 40. As recited above, Sick instead specifies that his stiffening struts connect to clamping section supports 11.

Further, Sick does not disclose struts which connect to the spine member of a space-frame as specified in independent claims 18 and 40. Sick explains at 4:27-31 that Sick’s stiffening struts connect to a lower region of Sick’s circular ring.

The Office’s assertions that components and relationships found in Applicant’s claims are present in Sick apparently rely on an unduly broad interpretation of claim language and the references. The Office construes claims under their broadest reasonable interpretation that a person of ordinary skill in the field would adopt, but the Office in this instance has advanced a very broad interpretation that is inconsistent with the specification as well as the Patent and Trademark Office’s standard for claim interpretation.

It appears, for instance, that an axle of a car would be “connecting” the car’s tires to the car’s roof under the Office’s approach to rejecting the current claims if a reference disclosed a car in which e.g., a tire was mounted upon a wheel, the wheel connected to a spindle, the spindle to an axle, and the axle connected via springs to a car body that has a roof. The Office cannot ignore the ordinary meaning of words to a person of ordinary skill when construing claims and references, and it appears that the Office has done so in this case. Applicant therefore submits that the Office’s construction of Applicant’s claims as well as the cited references is impermissibly broad if Applicant has interpreted the Office’s rejection and rationale correctly.

In view of the remarks above, Applicant submits that the cited references do not disclose all components of Applicant’s claimed carrier structure in the configuration specified in Applicant’s claims and that the rejections should therefore be withdrawn.

The Office has also not explained how a person of ordinary skill might combine Sick and Mertens into a viable carrier structure either using the components described in Sick or Mertens or by substituting obvious alternatives having the same function as components present in Sick's or Mertens' structures. For instance, neither Sick nor Mertens discloses how a platform having stiffening elements (such as a corrugated metal support as specified in Applicant's claim 19) can be fit into a mirror supporting structure as disclosed by Sick and especially how to fit such a structure into Sick's clamping section supports 11. It is not clear from the Office Action whether the Office asserts that one would place a corrugated metal panel on top of Sick's components or whether the corrugated metal support would substitute for some of Sick's components.

The Office Action explains that Sick's clamping section supports 11 correspond to a "platform" of Applicant's claims, while Sick's parabolic webs 12 and connecting webs 24 correspond to "stiffening elements." If a corrugated metal panel or other platform having stiffening elements replaces Sick's clamping section supports 11 and webs, 12, 24, the resulting assembly lacks the structural fitness and support for the corrugated metal panel to connect to either Sick's connection members 25 or to Sick's ring 26, and the corrugated metal panel lacks curved transverse support to support and shape the corrugated metal panel. Even if one tried to replace Sick's clamping section supports 11 with Applicant's corrugated metal panel to provide a "platform", one would necessarily also remove the parabolic webs 12 and connecting webs 24, since they are attached by construction to Sick's clamping section supports 11. The resultant structure would not function as desired and would also not provide all components as claimed in the relationship stated in claim 18 or claim 19.

Further, Applicant disagrees with the Office's assertion that Sick's struts 32 are connected to parabolic webs or a curved transverse support 12. Sick explicitly states that Sick's struts 32 are connected to Sick's clamping section supports 11.

As a consequence, if a platform such as a corrugated metal panel is substituted for Sick's clamping section supports 11, Sick's struts 32 would, by Sick's direction, attach to the platform (e.g. corrugated metal panel). There would be no connection of opposite ends of a curved transverse frame member to a spine member of a space frame.

The foregoing illustrates how it is clearly not obvious to go against Sick's disclosure of a fully-integrated solution for transverse support, mirror, and framework structure of the carrier structure to provide a platform that is separate from a reflector element and which secures to a curved transverse frame member as specified by claims 18 and 40. This conclusion is bolstered by the fact that Sick's structure does not function for its intended purpose if modified in the manner discussed in the Office Action from Sick's integral structure.

The Office's explanation of the basis for the rejections and the manner in which components would be substituted is therefore requested if the rejections are maintained.

In addition to the reasons discussed above, claim 21 is patentable because Sick in view of Mertens fails to disclose stiffening elements orientated to extend in a direction parallel to the axis of rotation of Applicant's claimed carrier structure (left to right beneath the curved mirrors illustrated in Mertens' Fig. 4). Mertens at 6:61-65 for instance discloses that corrugations extend horizontally, which in conjunction with Fig. 4 indicates the corrugations extend beneath a curved reflector and in a direction following the curvature of the reflector. Applicant's stiffening elements extend parallel to the axis of rotation of Applicant's carrier structure, which is 90 degrees from the direction that Mertens' corrugations would extend if one were to somehow incorporate Mertens' reflector panels into Sick's solar mirror apparatus. It is not simply a matter of design choice to orientate stiffening elements in the manner specified in Applicant's claim 21, since to do so would require ignoring Mertens' rationale for orientating corrugations in the direction that Mertens specified and substituting a new rationale for orientating them that is not apparent from the references. Nothing in Sick or Mertens would cause a person of ordinary skill to form a carrier structure as claimed in claim 21, and therefore the references do not render claim 21 obvious.

2. Rejection of claim 23 in view of Sick alone

Claim 23 was rejected under 35 U.S.C. 103(a) as being unpatentable over Sick, which the Office asserts discloses substantially all of the claim limitations and renders claim 23 obvious in view of case law to provide the limitation specified in claim 23. Applicant traverses the rejection for the following reasons.

A dependent claim incorporates by reference the limitations of the claim or claims from which the dependent claim depends. If the independent claim is rejected as being obvious in view of two references, a claim depending upon that independent claim and incorporating its limitations by reference cannot be obvious in view of only one of the references. The fewest references that might render the claim obvious would be the number of references used to reject the independent claim from which the dependent claim depends, and legal holdings cannot substitute for technical information that is clearly not present in either the reference or the case law.

Claim 23 depends from claim 22, which itself depends from independent claim 18. The Office assessed the subject matter of claim 18 and formed an initial belief that claim 18 was unpatentable in view of two references combined, Sick in view of Mertens. Claims 18 and 22 are incorporated by reference into dependent claim 23. It is not apparent from the Office Action or otherwise how the court decision cited in the Office Action provides components specified by claims 23, 22, and 18 that the Office Action indicates were not present in Sick alone.

Sick alone does not disclose both a concavely-curved platform and a frame structure to which the platform is secured as specified in claims 18 and 22 from which claim 23 depends. The cited court decision does not provide the structural features missing from Sick and does not allow for complete elimination of components. Consequently, Sick in view of the cited court decision does not render claim 23 unpatentable.

In addition, Sick would not render the selection of such a large radius of curvature obvious, even if the cited court decision provided components missing from Sick. If one tried to modify Sick to provide curvature to Sick's parabolic web (and therefore the reflector) to provide a focal length in the claimed range of 20-50 meters (approximately 65.6 – 164 feet), one would need to elevate the solar radiation receiver 28 of Sick's apparatus between approximately 65.6 feet and 164 feet above Sick's parabolic web. Sick's circular ring would therefore have to be approximately 40-100 meters in diameter (approximately 131 – 328 feet, as big as some of the world's larger Ferris wheels) to accommodate this radius of curvature in view of Sick's clamping section supports being secured at their ends, diametrically, to stiff circular rings 26 (*see Sick 3:3-9*). A person of ordinary skill would not find it obvious to provide the curvature specified in claim 23 to Sick's parabolic web and instead would avoid the radius of curvature specified in

claim 23. The assertion that the selection of the specified radius of curvature is routine for a person of ordinary skill in the field is therefore an incorrect assumption on the Office's part, and the rejection should be withdrawn for this reason as well.

Further, claim 23 is patentable for the reasons discussed above for independent claim 18 from which claim 23 ultimately depends, and the rejection should be withdrawn on this basis independently of the basis discussed immediately above.

Applicant consequently requests withdrawal of the rejection.

3. Rejection of claims 25 and 26 from Sick alone

Claims 25 and 26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sick alone. Dependent claims 25 and 26 each depend from independent claim 18.

As noted above for claim 23, the Office rejected claim 18 using two references and therefore indicated that Sick alone did not disclose or render obvious all of the components and relationships specified in claim 18 from which claims 25 and 26 depend. It is therefore incorrect to reject dependent claims 25 and 26 based on a single reference where their independent claim 18 was rejected based on multiple references. Applicant consequently requests that the rejection be withdrawn.

4. Rejection of claims 30 and 31 over Sick in view of Funger

Claims 30 and 31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sick (4,820,033) in view of Funger (6,543,441). The Office Action does not explain how the references provide all of the components and their relationships as specified in claims 30 and 31 as well as in claims 28 and 18 from which claim 30 depends. The Office Action therefore fails to establish a prima facie case of unpatentability.

Further, Sick in view of Funger does not provide the subject matter as claimed. It is not apparent from either the Office Action or from Funger how Sick's lack of disclosure of features specified in claims 18 and 28 are found in Funger.

In addition, claim 30 specifies that the hoop-like end member has a channel-section circumferential portion and a diametrically extending member that is constituted by one of the curved transverse frame members connected at opposite end regions to a spine member via struts of the space frame (see claims 28 and 18 from which claim 30 depends). Neither Sick nor Funger provides a hoop-like end member having a diametrically extending member constituted by a curved transverse frame member connected at opposite end regions to a spine member via struts of a space frame.

Sick's stiffening struts 32 do not connect to opposite end regions of a curved transverse frame member. Sick's stiffening struts connect to individual and spaced-apart clamping section supports 11, not opposite end regions of a curved transverse frame member extending diametrically across a hoop-like end member. Sick does not have a curved transverse frame member extending diametrically across a hoop-like end member, and especially one connected at its opposite end regions by struts. Sick's stiffening struts connect at a single position on Sick's circular ring 26, not to a spine member and again not to opposite end regions of a curved transverse frame member extending diametrically across a hoop-like end member. Funger likewise discloses nothing that would provide these features specified in Applicant's claim 30 through its dependencies and that are missing from Sick. Since the combination does not provide subject matter having the components and arrangement specified in claim 30, Sick in view of Mertens does not render claim 30 obvious for these additional reasons.

Claim 31 depends from claim 30 and is therefore patentable for the reasons stated immediately above. Applicant's claims 30 and 31 are patentable over the cited references for the reasons discussed above, and Applicant consequently requests withdrawal of the rejection.

5. Rejection of claims 32 and 33 over Sick in view of Butler

Claims 32 and 33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sick (4,820,033) in view of Butler (4,559,926). The Office Action does not explain how the references provide all of the components and their relationships as specified in claims 32 and 33 as well as in the claims from which claims 32 and 33 depend (claim 18 *inter alia*). There is nothing in the Office Action that suggests how Butler provides the components and their

relationships that the Office believed that Mertens provides. The Office Action therefore fails to establish a prima facie case of unpatentability.

Claim 32 claims a carrier structure having the components and relationships specified for claims 28 and 18. Claim 32 is patentable for the reasons discussed above for claims 18 and 28.

Claim 33 claims a carrier structure as claimed in claim 31, which incorporates the components and configurations specified in claims 30, 28, and 18. The Office Action states that Butler teaches a “solar collector drive arrangement including hoop element 18, with surrounding fixed chain 30” This is inaccurate. Butler’s chain is not fixed – it is capable of movement from one of Butler’s drive rings to the next. Butler’s chain is certainly not fixed to the hoop-like member. Otherwise, Butler’s drive ring would not be capable of moving 360 degrees as recited at 1:67-2:1 of Butler’s patent. Claim 33 is therefore patentable over the cited references for this reason as well as for the reasons explained for claims 30, 28, and 18.

6. Rejection of claim 37 over Sick in view of Mertens

Claim 37 recites that the mounting arrangement of the claimed carrier structure comprises a hold-down roller which prevents the lifting of the end members. The Office Action has not explained where in the cited references this feature is found, and Applicant has likewise not been able to find this feature disclosed in either of the cited references. Further clarification of the rejection and opportunity to address that rejection in response to a non-final Office Action are requested in the event the rejection is not withdrawn.

In view of the remarks above, Applicant respectfully requests withdrawal of the rejections and allowance of this application for issuance. Should any questions or issues arise, Applicant would appreciate a conversation with the Examiner in order to help avoid the Office having to send another non-final rejection as would be required under the current circumstances where Applicant has not amended the claims or otherwise introduced new issues for the Examiner’s consideration and the Office Action has not established a prima facie case of unpatentability of the claims.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Applicant therefore respectfully requests that the Office withdraw the outstanding rejections of the claims and pass this application to issuance. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

The Office is hereby authorized to charge any additional fees that may be required by this paper, or credit any overages, to Deposit Account No. 50-3229.

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Proof of Service by Electronic Filing System (EFS)

On October 8, 2010, I transmitted the documents named above by Electronic Filing System (EFS) of the United States Patent and Trademark Office of the addressee(s) as indicated above.

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